

Descriptions of new species of Pteromalidae from the Orient (Hymenoptera : Chalcidoidea)

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Abstract. Descriptions of 5 new species of Pteromalidae from the Orient are presented. The species described are *Propicrocytus indicus*, *Colotrechus agromyzae*, *Mokrzeckia menzeli*, *Gastrancistrus mangiferae* and *Psilocera ghanii*. A key to species of *Propicrocytus* and *Mokrzeckia* are given. While *M. orientalis* is recorded for the first time from Thailand, *Colotrechus* is the first record from the Orient.

Keywords. Pteromalidae; *indicus*; *agromyzae*; *mangiferae*; *menzeli*; *ghanii*.

1. Introduction

Girault (1915) described 3 species under *Arthrolysis* Forster from Australia. Szelenyi (1941) erected a new genus *Propicrocytus* with *A. trilongifaciatus* Girault as the type-species. Subba Rao (1973) described *Obtusiclava* with *O. oryzae* as type-species. Hummelen and Soenarjo (1977) studied the biology of this important parasite of the rice gall midge *Orseolia oryzae* (Wood-Mason). Bouček *et al* (1978) synonymised *Obtusiclava* with *Propicrocytus*. Species of *Propicrocytus* are widely distributed in the Indo-Australian region and *P. mirificus* (Girault) in particular is the commonest species and attacks several gallforming Diptera on Rice, Mango and many other weeds of the Gramineae. Two undescribed species are also known to the author from the Ethiopian region.

2. *Propicrocytus Szelenyi*, 1941

Type-species *Arthrolysis trilongifaciatus* Girault ♀.

Obtusiclava Subba Rao, 1973

Type-species *Obtusiclava oryzae* Subba Rao, monobasic and original designation ♂♀.

Key to species of Propicrocytus Szelenyi ♀

1. Fore femora pigmented.....	2
- Fore femora not pigmented, golden yellow.....	3

2. Head and thorax metallic blue, fore coxae concolorous, fore femora blackish brown. Antennae wholly brownish yellow, club no longer than first funicle segment. Marginal vein one-third longer than postmarginal. Gaster with a longitudinal brownish stripe running down each lateral margin, base to two-thirds length and a median stripe from one sixth length to two-thirds length.....*flaviventris* (Girault) Australia

-. Head and thorax black; forecoxae brown to dark brown; fore femora reddish brown. Antennal scape and pedicel light brown with bases pale white, funicle and club light brown. Marginal vein only slightly longer than postmarginal vein. Gaster uniformly golden yellow with a few longitudinal dark patches on the basal two-thirds length*indicus* sp. n.
India: Punjab and Maharashtra.

3. Head and thorax metallic blue. Mandible 4 and 5 dentate 3 mm long. The median stripe on gaster extends distinctly distad of the distal ends of the marginal stripes. Antenna black except the scape and pedicel which are golden yellow.....*trilongifaciatus* (Girault) Australia.

-. Head and thorax black with greenish metallic reflections. Mandibles 4 and 5 dentate. 3 to 5 mm long. The median stripe and the marginal stripes extend all the way to the last tergite, the median stripe distinctly broken at each segmental incision, though the stripes are not so clearly broken in case of marginal ones. Scape, basal three-fourths and pedicel ventrally at the apex yellow, otherwise entire antennae brown to dark brown....
.....*mirificus* (Girault)
Australia; India. Punjab, Maharashtra, Orissa, Uttar Pradesh; Sri Lanka; Indonesia; Thailand.

Propicrocytus indicus sp. nov.

Female 2.5 to 3 mm. Head and thorax black. Abdomen pale to dark yellow, Tegulae dark brown. Fore legs except coxae and femora and middle and hind legs pale yellow or concolorous with abdomen; fore coxae and femora dark reddish brown. Antennae uniformly yellow with the club slightly darker. Wings hyaline; venation yellowish brown.

Head transverse (38:12), much broader than thorax when measured across tegulae (38:30), moderately convex in front and distinctly concave behind. Temples strongly receding, slightly less than half as long as eye (8:19). Ocelli in a wide angled triangle whose base is twice the sides (6:3); POL to OOL (6:7). Head very closely and evenly punctate. Antennae inserted high on the head the distance between anterior margin of clypeus and toruli and between toruli and median ocellus in the ratio of 13:15; scape slender, cylindrical and somewhat curved, reaching well beyond the vertex level, over five times as long as broad (22:4) and slightly more than three times as long as pedicel; first funicle segment longer than second, third and fourth equal, fifth and sixth shorter than fourth, club distinctly three jointed, as long as the combined length of the last two funicle segments.

Thorax slightly longer than wide when measured across tegulae (35:30). Prothoracic notum at a lower level, declivous and narrower than mesoscutum,

mesoscutum and scutellum more coarsely punctate. Notaular furrows almost absent but indicated anteriorly when viewed under strong light; scutellum as long as broad; propodeum as strongly punctate as scutellum except the nucha which is more or less smooth; callus strongly pilose and the propodeum without carinae or costulae; plicae not clearly indicated. Forewings narrow and long, length to breadth in the ratio of 8.5:3.5; discal cilia beyond speculum fine and evenly distributed; costal cell broad and with one complete row of setae on the under side; ratio of marginal, postmarginal and stigmal veins 20:18:8.

Abdomen acuminate, fractionally longer than the combined lengths of thorax and head, distinctly concave in dried specimens; ovipositor sheaths not exserted.

Male not known.

Material. Holotype ♀ (plus 3 ♀ paratypes), India: Punjab, on grass, 26. ix. 1975 (S L Sheemar); 3 ♀ Maharashtra, Nagpur, on *Eleusine indica*, 1975; 4 ♀ ex galls on *Cynodon dactylon*, 1975; in BMNH.

Propicrocytus indicus sp. nov. is very close to *P. flaviventris* (Girault) and can easily be separated from the key characters given in the key to species.

Colotrechnus agromyzae sp. nov.

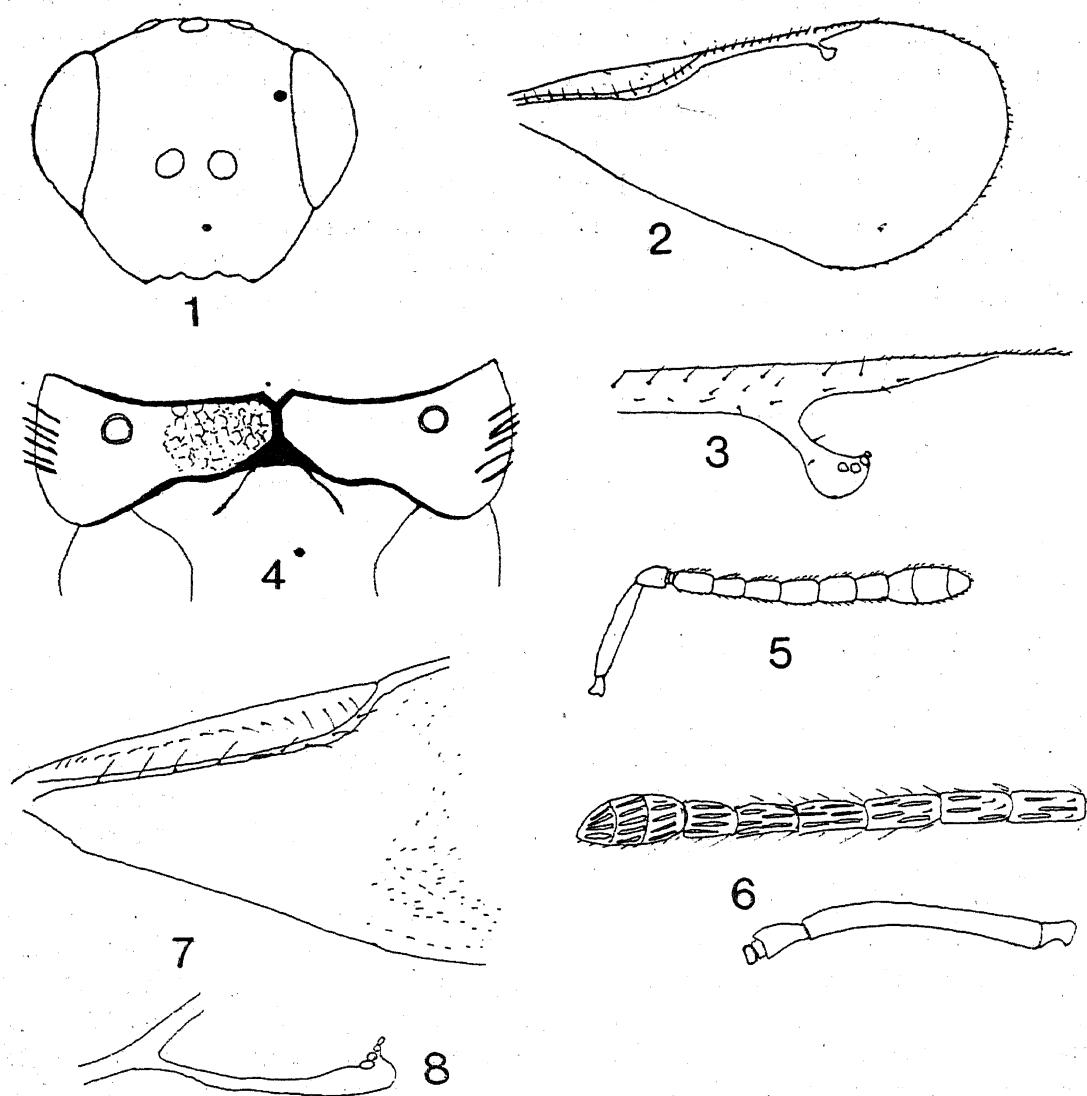
Female 2 to 2.2 mm. Head and thorax faintly metallic bluish green with coppery iridescence when seen at certain angles of strong light; abdomen black with greenish reflections. Antennae dark brown. All coxae and femora dark brown, knees, apices of hind tibiae and all tarsi pale white with the last tarsal segment dark. Wings hyaline, venation pale, hardly visible under natural light, discal cilia very sparse, even and fine; marginal fringe extremely short and almost bare as they fall off at the distal top of the forewing.

Head viewed dorsally, slightly broader than thorax at its widest (across the tegulae). Antennae originating slightly below centre of face, but well above the lower margin of eyes; malar space well developed, slightly longer than half the length of the compound eyes. Scape short, cylindrical, just short of reaching the median ocellus; pedicel shorter than the first funicle segment, funicle segments one to five longer than broad or quadrate, sixth somewhat transverse, club distinctly three jointed and slightly shorter than the combined lengths of the last three funicle segments. Ocelli arranged in a wide angled triangle, the base more than two times the sides, OOL to POL in the ratio of 4:12. Scorbes deep and polished, rest of the head finely shagreened and with sparse silvery fine pubescence.

Notauli well impressed and shows more than half way the mesoscutum. The reticulate sculpturing on pronotum and mesonotum much coarser than on scutellum. Propodeum with very delicate sculpturing, with a median vertical raised area (carina) which is polished and descends down to form a triangular smooth patch. Scutellum with a pair of lateral long bristles at the apex. Forewings over two times longer than wide (48:23). Marginal, postmarginal and stigmal veins in the ratio of 6:2:1; stigmal vein very short and rounded. Propodeal spiracle large and round, callus sparsely hairy.

Abdomen acuminate, less than two times as long as thorax (65:35). Ovipositor sheaths not exserted.

Male. Length 1.75 mm. Essentially similar to female but in very poor condition.

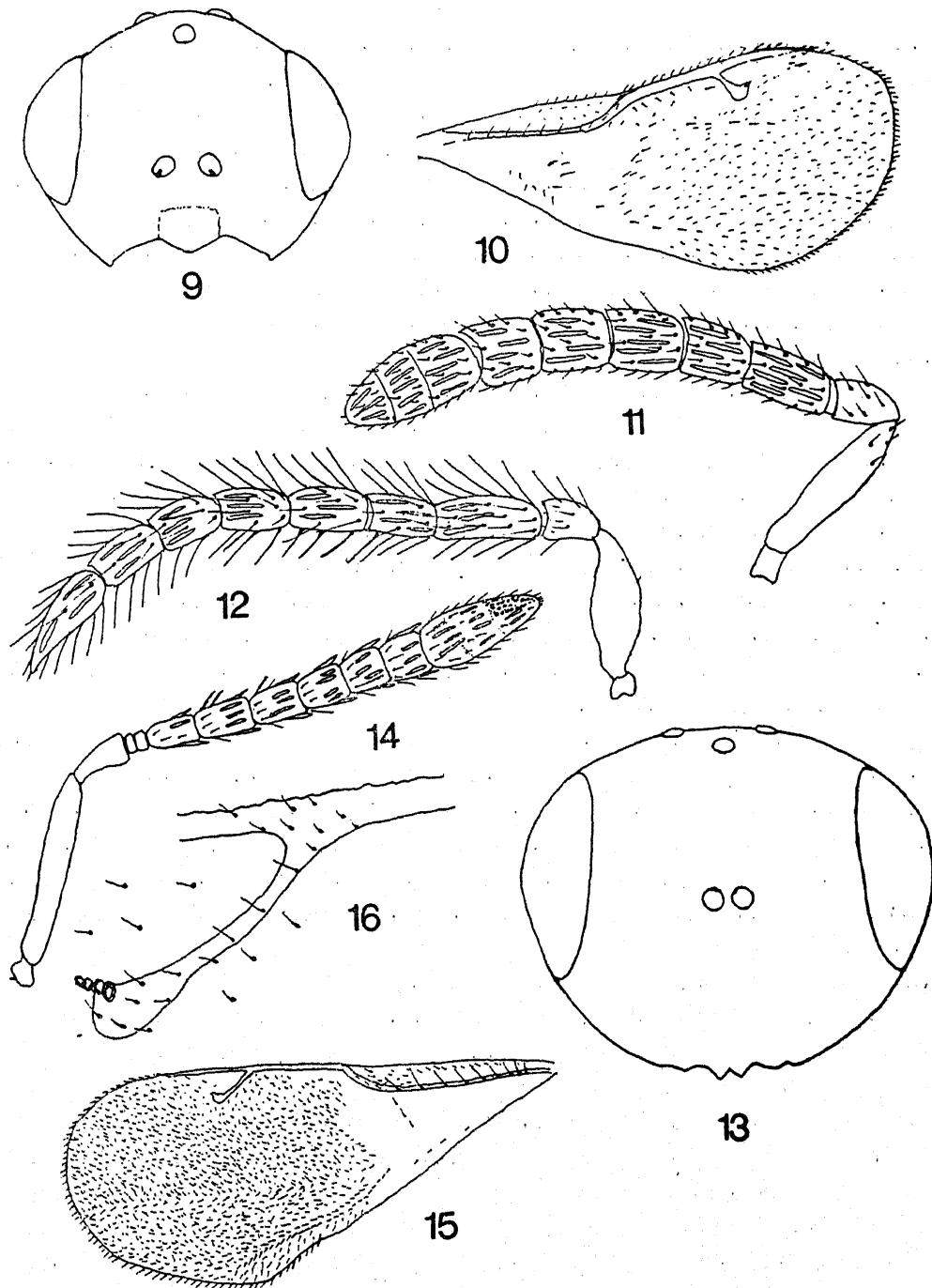


Figures 1-8. *Colotrechus agromyzae* sp. nov. ♀. 1. Head, frontal view; 2. Forewing; 3. Stigmal vein, enlarged; 4. Propodeum; 5. Antenna. 6-8. *Propicrocytus indicus* sp. nov. ♀. 6. Antenna; scape, pedicel and anelli separated from funicle and clava; 7. Forewing, basal half; 8. Stigmal vein, enlarged.

Material. Holotype ♀ (plus 2♀ 2♂ paratypes), Indonesia: Yogyakarta Kismo Sukirdo, ex *Agromyza* sp., date not known, possibly around 1930, in BMNH.

This unique genus is known to occur in Europe and North America and so far only three species are known and their biology is unknown. *Colotrechus agromyzae* sp. nov. is the first record from the oriental region and is known to have been reared from *Agromyza* sp.

Gastrancistrus mangiferae sp. nov.



Figures 9-16. 9-12. *Gastrancistrus mangiferae* sp. nov. ♀♂ 9. Head, frontal view; 10. Forewing; 11. Antenna ♀; 12. Antenna ♂. 13-16. *Psilocera ghanii* sp. nov. ♀. 13. Head frontal view; 14. Antenna; 15. Forewing; 16. Stigmal vein enlarged.

Female. 2.2-2.5 mm. Head and thorax dark green, gaster, basal one-third yellow testaceous, distal two-thirds black with very slight metallic green lustre. Antennal scape yellow testaceous, the rest dark brown. Fore coxae dark brown with greenish metallic reflections, middle coxae totally, hind coxae except for a small dorso-lateral patch which is brown, the rest of the legs yellow testaceous. Tegulae mainly testaceous. Eyes brick red. Ventation dark brown.

Head slightly broader than mesoscutum (28:25), about three times as broad as long. Ratio of POL to OOL 6:3.75; ocelli in an obtuse angled triangle. Head in frontal view almost quadrate, breadth to height ratio 32:22; vertex strongly arched, cheeks short, nearly straight in outline; malar space almost half the length of the eye and the malar groove strongly impressed. Anterior margin of clypeus curved, produced and almost angular medially. Sculpturing of the head including vertex and face alutaceous, only the shallow scrobal area polished. Antenna with the scape much smaller than the length of the eye (11:15), not reaching the median ocellus; pedicel small, about half as long as the first funicle segment; funicle segments two to five progressively shorter; club distinctly three jointed, not appreciably broader than the funicle, as long as the length of the last two funicle segments combined; flagellar hair very short.

Thorax slightly longer than broad, when measured across the tegulae about 1.4 times as long as broad; sculptured with fine reticulations. Notauli very deep and straight. Scutellum longer than mesoscutum (18:15) and longer than broad; frenum marked off by a fine line. Propodeum medially shorter than the frenum, shiny, almost weakly alutaceous, median longitudinal carina well developed, spiracles somewhat oval and not touching the metanotum; callus with very few hairs. Mesepisternum with its apical one-third smooth and shining and the mesepimeron distinctly marked off.

Legs not stout; middle tibial spur as long as or over slightly longer than the basitarsus. Forewing slightly more than twice longer than broad (73:35), costal cell not broad, lower surface with a single row of hairs only at the apical one-third of the costal cell; speculum open below, disc beyond speculum sparsely setose, radial cell without any trace of discal cilia; marginal vein 1.5 times as long as the postmarginal and 2.5 times as long as the stigmal; submarginal vein with about 14 bristles.

Petiole strongly transverse. Gaster sublanceolate, excluding the exserted ovipositor as long as the thorax, more or less parallel sided and the apex semicircular, a little over two times as long as broad, disc of gaster somewhat sunk, concave; ovipositor sheaths strongly exserted.

Male. Essentially similar to female. Gaster basally not or only slightly lighter in colour than the apical tergites. Antennal scape just reaching over the median ocellus, slightly dilated in the middle; pedicel very short, less than half the length of the first funicle segment (11:5); rest of the funicle segments longer than broad; club tapering and acutely pointed and vaguely two jointed. Funicle and club with long and erect hairs which are as long as the breadth of the funicle.

Material. Holotype ♀ (plus 4♀ 1♂ paratypes), India: Bihar, Sabour, ex galls on *Mangifera indica* 1975 (R S Yadav) in BMNH.

Gastrancistrus mangiferae sp. nov. runs to *G. autumnalis* (Walker) in Graham's key (1969) to species of North Western European species of *Gastrancistrus*. The new species described differ from *autumnalis* in the colour of the gaster, length of the gaster and in the number of bristles on the scutellum (6 to 8 pairs in *mangiferae* and 4 to 6 pairs in *autumnalis*).

Mokrzeckia Mokrzecki

Bouček *et al* (1978) synonymised *M. indica* Subba Rao with *M. orientalis* Subba Rao. Though the syntopic material comprised two distinct species, the holotypes

designated were of the same species. Therefore, a name is required for the first included species. Since the males exhibit much more distinct specific differences than females, the male is described in full and designated as the type for the second species.

Key to species of Mokrzeckia ♂

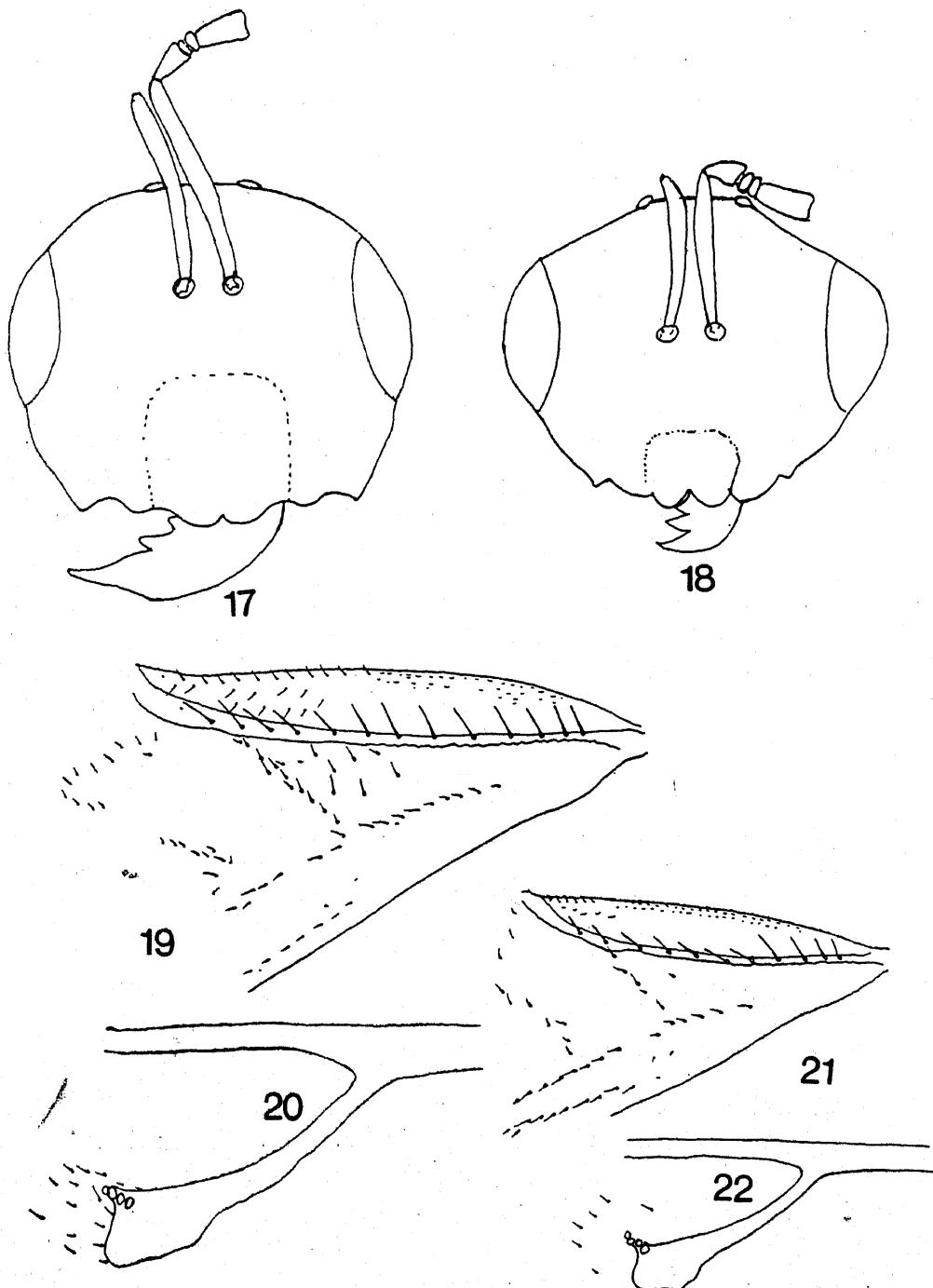
1. Antennal toruli originating well above the middle of the face, the distance between clypeus and toruli 2.3 times greater than the distance between toruli and median ocellus. Clypeal area very large, well depressed, smooth and shining. Mandibles enormous..... *orientalis* Subba Rao
India, Indonesia and Thailand
- Antennal toruli originating about middle of the face, the distance between the clypeal border and toruli about 1.3 to 1.4 times the distance between toruli and median ocellus. Clypeal area very small, sculptured and hardly depressed, mandibles not very large..... 2
2. Antennal scape uniformly dilated. Clypeus basally delicately striate, apically rugose punctate. Hind coxae on the outer three-fourths concolorous with thorax and the middle coxae with a small brown patch basally.....
..... *pini* (Hartig)
France, Germany, Austria, Czechoslovakia and Poland.
- Antennal scape cylindrical. Clypeal area distinctly uniformly striate. Hind coxae on the outer one-third to half concolorous with thorax, middle coxae completely yellow..... *menzeli*
India

Mokrzeckia menzeli n. n.

Mokrzeckia indica Subba Rao, 1978 *Oriental Ins.* 7: 358-360.

♂. Head and thorax brilliant metallic green; scape basal three fourths, legs except hind coxae, tegulae, pale yellow; hind coxae basal one-third metallic green. Scape apically and the rest of antenna dark yellow; gaster with base and sides metallic green followed by a yellow patch and the last 4 or 5 tergites dark brown with greenish metallic reflections on the sides. Sternites mostly yellow.

Head in frontal view slightly broader than high (5.5:5); eyes small, height of eyes about twice the malar space; clypeal margin deeply emarginate, small, sculpture with reticulate punctures as on the face. Antennal toruli nearer to median ocellus than to anterior clypal margin. Vertex broad, rounded apically, nearly 3.8 times as broad as the eye; ocelli in an equilateral triangle, lateral ocelli separated from ocular margin by about 2.5 times their own diameter. Scape cylindrical, 5 times as long as broad, pedicel narrow, short, 2 ring segments, first funicle segment the longest, 2-4 equal, 5 and 6 slightly shorter, but all segments of equal width, club as long as the combined lengths of the last two funicle segments, slightly wider than funicle, and appears to be three jointed in cleared slide mounted specimens. Mandible distinctly three-dentate and moderately large. Face and clypeus with long silvery setae.



Figures 17-22. 17, 19, 20. *Mokrzeckia Orientalis* Subba Rao ♂. 17. Head, frontal view; 19. Forewing, basal half; 20. Stigmal vein enlarged. 18, 21, 22. *Mokrzeckia menzeli* sp. n. ♂. 18. Head, frontal view; 21. Forewing, basal half; 22. Stigmal vein enlarged.

Material: Holotype ♂ India, Uttar Pradesh, Dehradun ex cocoon on *Shorea robusta* leaf. 15.xii.1928 (S N Chatterjee). Paratypes 8 ♂ same data; 6 ♀ India Uttar Pradesh, Dehradun, ex *Hybloeia puera* through *Apanteles melevolus* Wilkinson, 24.x.1927 (S N Chatterjee); 3 ♀ Dehradun, ex *Apanteles obliqua* var.

niger Wilkinson (S N Chatterjee); 9 ♂ Dehradun, ex *Hapalia machaeralis* Walker through *Miocolus dubius* Oll, 9.xii.1926 (S N Chatterjee).

Mokrzeckia orientalis Subba Rao

Mokrzeckia orientalis Subba Rao, 1973 *Oriental Ins.* 7 : 358.

Material studied: Holotype ♀ Indonesia, West Java, ex cocoons on *Cinchona* (parasite of psychid?), no date of collection, probably around 1920. 7 ♀ India, Uttar Pradesh, Ranikhet, ex cluster of cocoons hanging from oak tree. 17.xi.1918 (H.G.C.); 2 ♀ 1 ♂ Karnataka, Chikmaglur, ex *Polithlipta macralis*, 1972 (Siddappaji); 1 ♀ Meghalaya, Shillong, ex hairy caterpillar 22.x.1961 (C.I.B.C.); New record; 1 ♂ Thailand, Chieng Mai by sweeping, 17.xi.1976 (Kosol).

Psilocera ghanii sp. n.

♀ Length 2.5 mm.

Head and thorax black with fine to coarse reticulate punctures. Gaster metallic green except the last two tergites which are brown. Antennal scape, anelli and first funicle segment pale brown, pedicel and rest of antenna dark brown; legs except coxae testaceous, coxae concolorous with thorax; tegulae testaceous. Wings hyaline.

Head much broader than high (40:32), broader than thorax across the tegulae (40:32); moderately convex in front and only slightly concave behind; malar space short, slightly less than one-third the height of compound eye, malar groove absent. Ocelli in a wide angled equilateral triangle, POL to OOL ratio 9:8, base to sides 9:4. Antennal toruli well above the lower level of the eyes and almost equidistant from the clypeal border and the median ocellus; scape slender, nearly 6 times as long as broad (29:5), just short of reaching the median ocellus, pedicel a little more than one-third the scape (29:9), two transverse anelli, funicle segments in the ratio of 8:8:7.5:7:6.5:6, flagellum progressively broadening (4 to 7), clava slightly shorter than the combined lengths of the last three funicle segments (19.5:18); clava in whole mounted specimens on card tips appear to be faintly three jointed, when cleared and mounted on slide does not show the sutures and therefore, appears to be unjointed. Micropilosity of clava one-third the length in prepared slide mount. Head and face moderately reticulate punctate, clypeus striate, striae short, not reaching the eyes, a narrow elevated area between the clypeus and toruli shining and faintly reticulate; face and vertex with long white silvery setae.

Thorax slightly shorter than gaster (36:50), pronotum very narrow in the middle, less than one-seventh as long as mesoscutum (2:15), mesoscutum nearly as long as scutellum; propodeum shorter than scutellum (11:15) with a basal transverse costula that gives rise to a short median longitudinal carina, much more than one third the propodeum and slightly elevated, more coarsely punctate than the basal two-thirds of propodeum, plicae not indicated. Spiracles small and round. Forewings length to breadth in the ratio of 8:3.3; marginal, postmarginal and stigmal veins in the ratio of 15:12:7; basal cell of forewing with 3 to 4 setae.

Gaster acuminate, somewhat concave, ovipositor sheaths slightly exserted.

Male not known.

Material: Holotype ♀ Pakistan, Babakewal, ex *Cryptocephalus faustulus* Suffrian larva on *Tamarix dioica*, 5.xii.1976 (C.I.B.C.). Paratype 1♀, same data as holotype, right antenna and left forewing removed and mounted on a slide. Types in the British Museum (Natural History).

Psilocera ghanii sp. nov. differs from *P. obscura* in the ratio of the venation of forewing, in the POL to OOL; in the sculpturing of the propodeum. In *obscura* the legs, particularly the femora, are dark brown to black, tegulae black, whereas in *ghanii* sp. nov. the legs except coxae are uniformly testaceous, tegulae also testaceous.

The new species is named after my friend Dr M A Ghani, who was in charge of the Commonwealth Institute of Biological control sub station in Pakistan for over two decades, and has contributed a great deal towards the development of biological control of insect pests.

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